UNITED STATES PATENT AND TRADEMARK OFFICE

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CESARI AND MCKENNA, LLP
88 BLACK FALCON AVENUE
BOSTON, MA 02210

EXAMINER
HUSSAIN, TAUQIR

ART UNIT	PAPER NUMBER
2152	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04 February 2008*.
2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.
3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-38* is/are pending in the application.
    4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5)☐ Claim(s) _____ is/are allowed.
6)☒ Claim(s) *1-38* is/are rejected.
7)☐ Claim(s) _____ is/are objected to.
8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.
10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.
    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
    a)☐ All   b)☐ Some * c)☐ None of:
    1.☐ Certified copies of the priority documents have been received.
    2.☐ Certified copies of the priority documents have been received in Application No. _____.
    3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)
2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3)☒ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date *04/04/2008*.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .
5)☐ Notice of Informal Patent Application
6)☐ Other: _____.

DETAILED ACTION

Response to Amendment

1.   This office action is in response to amendment /reconsideration filed on

02/04/2008, the amendment/reconsideration has been considered. Claims 14 and 22

have been amended, claims 29-38 have been newly added and therefore, claims 1-38

are pending for examination, the rejection cited as stated below.

Response to Arguments

2.   Applicant's arguments filed on 02/04/2008 have been fully considered but they

are not deemed to be persuasive. In the remarks, applicant argued in substance that

(a)   Prior art "Sutherland" does not disclose, "**a storage operating system**

including a cluster connection manager adapted to create, destroy...."

As to Point (a) Examiner respectfully disagrees and refers to "Sutherland" Fig.4,

element 12 a "storage coordinator" is performing the equivalent task to claimed

limitation of "connection manager" in claim 1 and further nodes-14 can be

interpret as peer nodes attached to said storage coordinator, and further [0063],

where setting up a policy by system administrator for storage coordinator for

node addition, removal and recovery policy are the equivalent to establishing a

session or destroying a session upon meeting predetermined parameters of each

node participating in a replication group and therefore, equivalent to the functions

of connection manager in claim 1.

(b)   Prior art "Sutherland and Meyer" does not teach, "creating, using a cluster

connection manager executing on a storage system, an initial connection with a

cluster partner".

As to point (b), Examiner respectfully disagrees and refers to "Sutherland"

paragraph [0018], where storage coordinator creates a replication group which

equivalently can be interpret as cluster partner to provide and allocate

predetermined amount of storage resources.

Claim Objections

3.   Claims 37 and 38 are written in alternative form, claims recite "one or more peer

processes" and "one or more cluster connection managers" and therefore Examiner will

only choose to examine the claim interpreting as "one peer process" and "one cluster

connection manager...".

Claim Rejections - 35 USC § 101

4.   35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of
> matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the
> conditions and requirements of this title.

5.   Claims 1 and 28 are rejected under 35 U.S.C. 101 because the claimed invention

is directed to non-statutory subject matter. The language of claims raises a question as

to whether the claims are directed merely to an abstract idea that is not tied to a

technological art, environment or machine which would result in a practical application

producing a useful, concrete and tangible result to form the basis of statutory subject

matter under 35 U.S.C. 101. The claims appear to define the metes and bounds of an

invention comprised of "operating system" (software) alone without claiming associated

computer hardware required for execution. Software alone, without a machine, is

incapable of transforming any physical subject matter by chemical, electrical, or

mechanical acts. Correction is required.

6.   Newly added claims 29, 30 and 36 are rejected under 35 U.S.C 101 as being

directed to non-statutory subject matter. Claims 29, 30 and 36, In the light of

specification on page 20, applicant has provided that applicant intends the invention to

be implemented as software embodied as a computer readable-medium having

program instructions, which implies any transmission medium which can include, cable,

electromagnetic waves or wireless signals carrying computer readable instructions as

such claims are drawn to a form of signal and light waves. Carrier waves or signal does

not fall into one of the four categories of invention and therefore, claims 29-30 and 36

are not statutory. Signal is not a series of steps or acts and thus is not a process. Signal

is not a physical article or object and such is not a machine or manufacture. Signal is

not a combination of substances and therefore, not a composition of matter.

7.   The text of those sections of Title 35 U.S.C 102(e) and 103(a) not included in this

action can be found in a prior Office Action.

8.   Claim 1-2, 4 and 6-12 are rejected under 35 U.S.C. 102(e) as being anticipated

by Sutherland et al. (Pub. No.: US 2002/0114341 A1), hereinafter "Sutherland".

9.   Claims 5, 13-19, 25-26 and 28 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Sutherland in view of Meyer et al. (Patent No.: Us 7,203,730 B1),

hereinafter "Meyer".

10.   Claims 20-21, are rejected under 35 U.S.C 103(a) as unpatentable over

Sutherland and Meyer as applied to claims 1-19 above in view of Craddock et al. (Pub.

No.: US 2003/0061296 A1), hereinafter "Craddock".

11.   Claim 22 is rejected under 35 U.S.C 103(a) as unpatentable over Sutherland as

applied to claims 1-21 and 25-28 in view of Pinto (Patent No.: US 7,099,337 B2)),

hereinafter "Pinto".

12.   Claims 23-24, are rejected under 35 U.S.C 103(a) as unpatentable over

Sutherland and Pinto in view of Gronke (Pub. No.: US 2002/0071386 A1), hereinafter

"Gronke".

13.   Claim 3 is rejected under 35 U.S.C 103(a) as unpatentable over Sutherland as

applied to parent claim 1 above, in view of Chu et al. (Pub. No.: US 2004/0019821 A1),

hereinafter "Chu".

14.   Claim 27, is rejected under 35 U.S.C 103(a) as unpatentable over Sutherland as

applied the parent claim 25 above, in view of Chu et al. (Pub. No.: US 2004/0019821

A1), hereinafter "Chu".

15.   Sutherland, Meyer, Craddock, Pinto, Gronke and Chu have been cited as prior

arts in the last office action. The teachings that applicable are respectfully maintained

and incorporated by reference as set forth in the last office action.

16.   Rejections to the newly added claims 29-38 and change in grounds of rejection

to claims 25-26 and claim 28 are cited as below.

17.   Claims 25-26, 28, 31 and 35-38 are rejected under 35 U.S.C. 102(e) as being

anticipated by Sutherland et al. (Pub. No.: US 2002/0114341 A1), hereinafter

"Sutherland".

18.   As to claim 38, Sutherland discloses, one or more peer processes executing on

each storage system partner (Sutherland, Fig.4, [0050], where distributing workload to

various groups or nodes means peer processes executing on each storage system

partner and process can be equivalent to search process);

        a plurality of cluster interconnect driver executing on the storage system

(Sutherland, Fig.4, [0050] since there is cluster involve in the processing therefore, it is

inherent that there exists a network communication device which is combination or

hardware and software being the driver); and

        one or more cluster connection managers configured to detect a high bandwidth

load on a first cluster connection manager and in response to detecting a high

bandwidth load, utilize a second cluster connection manager to access each storage

system partner (Sutherland, Fig.4, [0020], where workload is balances among various

groups and selectively assigning the nodes means storage coordinator must consider the load on each node individually).

19.   As to claim 37, carry similar limitations as claim 38 above, additionally Sutherland discloses, determining the failure of the first cluster interconnect driver, utilizing the second cluster interconnect (Sutherland, Abstract, where storage coordinator may also be dynamically replicated on other storage coordinators in a cluster in case one of the coordinators should fail).

20.   As to claims 31 and 36 (method and computer readable medium), Sutherland discloses, waiting for an even from a client communicating with a cluster partner to received by a cluster connection manager executing on a storage operating system (Sutherland, Abstract, where responding the query from the user means there is a waiting period when computer receives the query from user);
Determining whether the event is a client event (Sutherland, Abstract, where query from user is a determination of client event);

        In response to determining that the event is a client event, performing the event utilizing the cluster connection manager (Sutherland, Abstract, where selected nodes perform their searches and report the search results back to the storage coordinator, which organizes the results and provides them to the user).

21.   As to claim 35, Sutherland discloses, monitoring the status of one or more cluster interconnect drivers utilizing the cluster connection manager (Sutherland, Abstract,

where storage coordinator performs/manages the task of nodes statuses by distributing workload).

22.   As to claim 25, Sutherland discloses the invention substantially, including, a cluster connection manager having means to manage a set of peer-to-peer connections associated with a set of cluster connection manager clients executing on the storage system (Sutherland, Fig.4, [0040, lines 1-8], where storage coordinator 12 and cluster 13 managers various sites to promote efficient management of the storage resources).

23.   As to claim 26, Sutherland discloses the invention substantially as in parent claim 25, including, wherein the set of cluster connection manager clients further comprises a failover monitor (Sutherland, [0015, lines 6-13], where laptop is a failover monitor).

24.   As to claim 28, is rejected for the same rationale applied to claim 25 above.

25.   Claims and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sutherland in view of Meyer et al. (Patent No.: Us 7,203,730 B1), hereinafter "Meyer".

26.   As to claim 29, Sutherland discloses, the invention substantially, including, creating, using a cluster connection manager executing on a storage system, an initial connection with a cluster partner (Sutherland, Fig.4, [0018], where storage coordinator creates a replication group which equivalently can be interpret as cluster partner to provide and allocate predetermined amount of storage resources and further [0104, lines 1-3], where new node is added and based on the new addition the process initialized by creating new storage lockers);

exchanging a set of peer connection information (Sutherland, [0113, lines 1-8],

where node information is passed to master replication group);

passing a set of client information to the cluster partner (Sutherland, [0113, lines

1-8], where node information is passed to master replication group which, could be

cluster partner);

creating a set of appropriate communication ports (Sutherland, [0052, lines 7-16],

where, nodes could be interpret as communication ports). However, Sutherland is silent

on alerting the cluster partner of a ready status and alerting a set of clients that the

cluster partner is in a ready state. Meyer, however discloses, alerting the cluster partner

of a ready status (Meyer, Col.13, lines 17-22 and 28-30, where SCSI device manager

performs the readiness status to other services which could be cluster partners); and

alerting a set of clients that the cluster partner is in a ready state (Meyer, Col.13, lines

28-30, where SCSI device manager performs the readiness status let the client know of

ready status).

Therefore, it would have been obvious to one ordinary skilled in the art at the

time the invention was made to combine the teachings of Sutherland as applied to claim

1-2 and 4 above with the teachings of Meyer in order to perform functions including

discovery, classification, and profiling of storage devices, computer systems, connection

elements, and other components relating to a storage area network (SAN).

27.   Claims 30 and 32-34 are rejected under 35 U.S.C 103(a) as unpatentable over

Sutherland as applied to claims 1-21 and 25-28 in view of Pinto (Patent No.: US

7,099,337 B2)), hereinafter "Pinto".

28.   As to claim 30, Sutherland disclose, the invention substantially as applied to

claims 1, 4 and 6-12 above, including, alerting, using a cluster connection manager

executing on a storage system, a set of client of an impending termination of the

communication session (Sutherland, [0063], where disclose is recovery policy including

thresholds for a timing of various stages of alerts to the storage coordinator/connection

manager);

Sutherland however is silent on disclosing explicitly, "closing, by the clients, a set

of communication ports associated with the communication session and performing an

initialization of a peer-to-peer communication session procedure".

However, Pinto discloses, closing, by the clients, a set of communication ports

associated with the communication session (Pinto, Col.11, lines 7-8, where switch

configuration means closing offline or non-communicative ports); and

performing an initialization of a peer-to-peer communication session procedure

(Pinto, Col.11, lines 3-7, where subnet 500 will be initialized).

Therefore, it would have been obvious to one ordinary skilled in the art at the

time the invention was made to combine the teachings of Sutherland with the teachings

of Pinto in order to provide a mechanism at a host node to implement redirection for

Class Managers that do not reside on the host node in order to process incoming data

messages accordingly in a switched fabric for scalable solutions (Pinto, Abstract).

29.   As to claim 32 carry similar limitation as claim 30 above and therefore is rejected

under for same rationale.

30.   As to claim 33, Sutherland and Pinto disclose the invention substantially as in

parent claim 32 above, including, wherein the set of communication ports comprise a

set of virtual interface connections (Pinto, Fig.4, Col.1, lines 51-55, where queue pair

can be interpret as set of virtual interface connections).

31.   As to claim 34, Sutherland and Pinto disclose the invention substantially as in

parent claim 32 above, including, wherein a set of clients comprises a failover monitor

(Sutherland, [0035, lines 9-12, where failed storage coordinator could be interpret as

cluster connection manager client failover monitor).

32.   **Examiner's Note:** Examiner has cited particular columns and line numbers in the

references, as applied to the claims above for the convenience of the applicant.

Although the specified citations are representative of the teachings of the art and are

applied to the specific limitations within the individual claim, other passages and figures

may apply as well. It is respectfully requested from the applicant in preparing

responses, to fully consider the references in its entirety as potentially teaching of all or

part of the claimed invention, as well as the context.

Conclusion

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Tauqir Hussain whose telephone number is 571-270-

1247. The examiner can normally be reached on 7:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Bunjob Jaroenchonwanit can be reached on 571 272 3913. The fax phone

number for the organization where this application or proceeding is assigned is 571-

273-8300.

Information regarding the status of an application may be obtained from the

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USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/T. H. /

Examiner, Art Unit 2152

/Bunjob Jaroenchonwanit/

Supervisory Patent Examiner, Art Unit 2152